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PATENT

**SEP 29 2006**

Atty. Dkt. No. YOR920030469US1

**REMARKS**

In the Office Action, the Examiner indicated that claims 1-14 are pending and that claims 1-14 are rejected. The Applicants respectfully traverse the rejection. In view of the following discussion, the Applicants submit that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103. Thus, the Applicants believe that all of the presented claims are in condition for allowance.

**I. REJECTION OF CLAIMS 1-14 UNDER 35 U.S.C. § 103****A. Claims 1-3, 5-6, 9-10 and 13**

The Examiner rejected claims 1-3, 5-6, 9-10 and 13 as being unpatentable under 35 U.S.C. §103(a) over the Maszara et al. patent (U.S. Patent No. 6,599,831, issued July 29, 2003, hereinafter referred to as "Maszara") in view of the Hizawa patent application (U.S. Patent Application Publication No. 2003/0096491, published May 22, 2003, hereinafter referred to as "Hizawa"). The Applicants respectfully traverse the rejection.

The Examiner's attention is respectfully directed to the fact that Maszara and Hizawa, singly or in any permissible combination, fail to teach or suggest forming a gate structure having raised source and drain regions, as recited in Applicants' independent claim 1.

The Examiner concedes that "Maszara fails to disclose having an elevated source and drain" (See, Office Action of June 29, 2006, Pg. 3). However, the Examiner alleges that Hizawa supplies this missing limitation. The Applicants respectfully disagree.

The Examiner cites FIG. 14 of Hizawa to teach "the use of an elevated source and drain/SOI structure". However, FIG. 14 fails to illustrate the source and drain regions (*i.e.*, the "active region") of the depicted semiconductor device, much less to illustrate elevated source and drain regions. Furthermore, the discussion of FIG. 14 in Hizawa's specification (*i.e.*, paragraph 0053) merely discusses the effects of implanting argon ions in the SOI substrate instead of arsenic ions and makes no mention of the active region (*i.e.*, the source and drain regions) being raised. Moreover, there is no discussion anywhere in Hizawa's specification of a semiconductor device that has

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raised source and drain regions (i.e., raised with respect to the plane of the gate oxide/silicon substrate interface). In fact, Hizawa gives very cursory discussion to the source and drain regions in the specification, in most cases choosing not even to illustrate these regions in the drawings. For at least these reasons, the Applicants respectfully submit that Hizawa does not, as the Examiner suggests, disclose the use of an elevated source and drain.

Thus, Maszara in view of Hizawa does not teach or suggest forming a gate structure having raised source and drain regions. Specifically, Applicants' claim 1 positively recites:

1. A method of fabricating a complementary metal oxide semiconductor (CMOS) field effect transistor, comprising the steps of:
  - (a) providing a substrate;
  - (b) providing on said substrate a polysilicon layer formed upon a gate dielectric layer;
  - (c) doping the polysilicon layer using at least one dopant;
  - (d) forming a gate structure for the transistor having a polysilicon gate electrode and raised source and drain regions;
  - (e) depositing on the polysilicon gate electrode at least one of a metal and an alloy; and
  - (f) siliciding the polysilicon gate electrode to form a silicide and at least one monolayer of the at least one dopant at an interface between the gate dielectric layer and the silicide. (Emphasis added).

Since Maszara in view of Hizawa does not teach or suggest forming a gate structure having raised source and drain regions, Maszara in view of Hizawa does not teach each and every element of Applicants' claim 1. Moreover, dependent claims 2-3, 5-6, 9-10, and 13 depend, either directly or indirectly, from independent claim 1 and recite additional features. As such, and for at least the exact same reason set forth above, the Applicants submit that 2-3, 5-6, 9-10, and 13 are also not made obvious and are allowable.

Therefore, Applicants contend that claims 1-3, 5-6, 9-10, and 13 are patentable over Maszara in view of Hizawa and, as such, fully satisfy the requirements of 35 U.S.C. §103. Thus, Applicants respectfully request that the rejection of claims 1-3, 5-6, 9-10, and 13 under 35 U.S.C. §103 be withdrawn.

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**B. Claim 4**

The Examiner rejected claim 4 as being unpatentable under 35 U.S.C. §103 over Maszara in view of Hizawa and further in view of the Buynoski patent (U.S. Patent No. 6,518,113, issued February 11, 2003, hereinafter referred to as "Buynoski"). The Applicants respectfully traverse the rejection.

As discussed above, Maszara and Hizawa, singly or in any permissible combination, fail to teach, show or suggest forming a gate structure having raised source and drain regions, as recited in Applicants' independent claim 1. Buynoski fails to bridge this gap in the teachings of Maszara and Hizawa. Thus, Maszara in view of Hizawa and further in view of Buynoski does not teach each and every element of Applicants' claim 1.

Claim 4 depends from claim 1 and recites additional features therefore. As such, Applicants contend that claim 4 is patentable over the cited combination and, as such, fully satisfies the requirements of 35 U.S.C. §103. Accordingly, Applicants respectfully request that the rejection of claim 4 under 35 U.S.C. §103 be withdrawn.

**C. Claims 7, 8, 11, 12 and 14**

The Examiner rejected claims 7, 8, 11, 12 and 14 as being unpatentable under 35 U.S.C. § 103 over Maszara in view of Hizawa and further in view of the Chong et al. patent (U.S. Patent No. 6,624,489, issued September 23, 2003, hereinafter referred to as "Chong"). The Applicants respectfully traverse the rejection.

As discussed above, Maszara and Hizawa, singly or in any permissible combination, fail to teach, show or suggest forming a gate structure having raised source and drain regions, as recited in Applicants' independent claim 1. Chong fails to bridge this gap in the teachings of Maszara and Hizawa. Thus, Maszara in view of Hizawa and further in view of Chong does not teach each and every element of Applicants' claim 1.

Claims 7, 8, 11, 12 and 14 depends from claim 1 and recite additional features therefor. As such, Applicants contend that claims 7, 8, 11, 12 and 14 are patentable over the cited combination and, as such, fully satisfy the requirements of 35 U.S.C.

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§103. Accordingly, Applicants respectfully request that the rejection of claims 7, 8, 11, 12 and 14 under 35 U.S.C. §103 be withdrawn.

## II. CONCLUSION

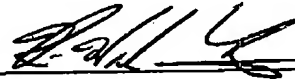
Thus, the Applicants submit that all of the presented claims fully satisfy the requirements of 35 U.S.C. §103. Consequently, the Applicants believe that all of these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the issuance of a final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Kin-Wah Tong, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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